

bright yellow, with a spot of vermilion on the lower throat. Hab. Basilan.

Arachnothera dilutior, Sharpe, resembles *A. longirostris*, but is distinguishable by its brown lores and by the ashy whitish colour of the entire under-surface, only the flanks being slightly washed with sulphur-yellow; pectoral tufts orange-yellow. Hab. Palawan.

Dicaeum dorsale, Sharpe. Looking at first sight like *Prionochilus percussus*, Temm. Blue-grey above with a conspicuous dorsal patch of orange-scarlet; underneath orange, paler yellow on the throat and abdomen. Hab. Palawan.

Dicaeum hypoleucum, Sharpe, of the same group as *D. retrocinctum*, Gould, but plainer coloured, being entirely black above, and entirely white below (♂). Hab. Basilan.

Dicaeum hamatostictum, Sharpe, also of the same group as the preceding. Black above, white below, the centre of the body bright crimson, with a black band across the fore-neck. Hab. Guimaras.

R. BOWDLER SHARPE

SCIENCE IN GERMANY (From a German Correspondent)

C IENKOWSKY, who several years ago made some exceedingly interesting communications on the low organisms known as Monads (*Archiv für Microscopische Anatomie*, i. 1865), has recently contributed more additional information regarding them and allied organisms (*ibid.*, xii. 1875). To the lowest order of plants belong the Myxomycetes, which, in the complete state, form protoplasmic nets, named plasmodia. Cienkowsky found such plasmodia in fresh water, which fed themselves by suction of algæ; on passage into the resting state, they fell asunder into several cysts, and (what is deserving of special attention), by the release of small portions from their mass, produced amoeba, i.e., self-supporting individuals, which creep about by means of pseudopodia, and which have hitherto been regarded as independent animal organisms. As this phenomenon has also been observed in other plasmodia (Brefeld), it is not improbable that very many amoeba do not represent independent forms, but belong to the development cycle of other and plant-like forms. *Ciliophrys infusorium*, an organism which stands very near the animals named Actinophrys, is transformed while under the covering glass, into a swarmer (swarmspore), and when several individuals are connected, or one enters on the process of division, there arise as many swarmers as there were parts. Through this formation of swarmers there appears Heliozoa, which group belongs to the Actinophrys, closely related to Monads, or those lowest organisms which have been claimed both by zoologists and botanists as objects belonging to them. Among the Monads, Cienkowsky observes various encystments, divisions, and colony formations; but the most remarkable of such processes is that in *Diplophrys stercorea*, an extremely small cell-like organism with a yellow spot, and pseudopodia at two opposite ends of the body. These little bodies, observed in moist horse-dung, multiply by division, and form by union of pseudopodia, long strings in which separate individuals can glide to and fro. In several of the organisms he examined, Cienkowsky was able to observe the taking up of solid food by suction of algæ. Thus the boundary lines, which it has so long been usual to draw between plant and animal organisms, and between the individual groups of those lowest forms of life, appear more and more illusory, and the supposition is recommended of a common lowest kingdom of organisms, that of Protista (Haeckel), out of which animals and plants have by degrees been differentiated.

The Amphioxus, that remarkable animal which, by its position at the lower end of the series of vertebrates, is become much better known, even among the laity, than most of the other vertebrates, enjoys no less the continual attention of anatomists. Among the various recent works which have had Amphioxus for their subject, one of the most comprehensive is that of Langerhans (*Archiv für Microsc. Anatomie*, xii. 1875), from which I take some generally interesting data. The Amphioxus, it is known, is so indifferent in the fore-end of its body that opinions as to the extent to which it is to be regarded as a head, and what parts of it are to be compared to the characteristic

parts of the head in other vertebrates, are still ever at variance with each other. Especially does the fore-end of the central nerve system receive various explanations, and Langerhans has set himself to determine more precisely its anatomical relations. The entire central nerve-system is a regular tube which only at the fore-end is somewhat enlarged. This part, therefore, has been named the brain, but it has been compared now with this, now with that, part of the brain of other vertebrates, according to the determination of the nerve proceeding from it. Now Langerhans shows that from the brain proceeds one pair, and somewhat further back a second pair, of nerves, which are distinguished from all other peripheric nerves, in that some ganglion cells are interposed in their course. They can only, therefore, be denoted as special brain nerves. Further, there is the left side extremity of the brain in front, the point of which is connected with the olfactory cavity, and which, as a hollow prolongation of the brain, can only be compared to a bulbus olfactorius, while the pigment spot referred to as an organ of sight lies also not outside of the brain (Hasse), but in its front wall (W. Müller). The fore-end, accordingly, of the central nerve-system of the Amphioxus, as far as behind the roots of the second nerve pair, is to be compared with the entire brain of other vertebrates, not with separate parts of it. Further, of the two higher organs of sense of the amphioxus, the organ of smell is allied to that of other vertebrates, the organ of sight to that of the Ascidians, whereby the relation between these latter, the Amphioxus, and the vertebrates, is confirmed. As to the significance of the body-cavity of Amphioxus, Langerhans is not yet very clear, and only the history of development can give satisfactory information regarding it. He found, however, that in this cavity lie not only the organs of sex, but also excreting glands, which may be regarded as kidneys; so that the space appears, at least physiologically, as the ventral cavity. Those glands which F. Müller had already observed, occur in peculiar folds of the epithelium of the ventral cavity, so that the excretion takes place directly into this cavity; a structure which is repeated at least in the embryonal organs of excretion of Amphibia (Goette). The sex organs of the Amphioxus are at first quite similar for both sexes, and placed indifferently; they arise from a thick-walled bladder, composed of quite homogeneous cells in the wall of the ventral cavity. At the time of sexual maturity, these indifferent cells are transformed either into semen-forming elements, spermatoblasts, or simply grow into eggs. Langerhans met with both sexual products in the same organ, so that perfect homology of these is established for Amphioxus, as Goette and Semper have previously affirmed it for Amphibians and Sela-chians; and the hypothesis of hermaphroditism as the original form of the sex organs must be rejected. After demonstrating for some other organs and tissues, the agreement of the amphioxus with other vertebrates, especially with Cyclostoma (and the hitherto doubtful presence of blood-capillaries in the former is confirmed), Langerhans comes to the conclusion that, in opposition to the view advocated by Semper, who disputes the affinity of Amphioxus to the vertebrates, such an affinity appears indubitable, from most of the anatomical relations.

NOTES

A NUMBER of highly interesting excursions has been arranged in connection with the meeting of the French Association at Clermont. One day will be devoted to a visit to the argentiferous lead-mines of Pontgibaud, the lavas of Volvic, the town of Riom. There will be a second excursion to Issoire, "celebrated for its college and its caldrons," wrote Voltaire; there will be a visit to the grottoes of Sonas on the same day. There may also be a third excursion to Thiers, the cutlery and paper manufactures of which are of interest. A last excursion, consisting of a visit to the thermal stations of Mont-Dore, Bourboule, and St. Nectaire, has somewhat tried the ingenuity of the local committee, as it will be difficult to get conveyances enough to carry the members to these somewhat distant points. But no doubt, as we said last week, the great attraction of this meeting will be the inauguration of the observatory on Puy-de-Dôme, which amid many difficulties has been established by M. Alluard. From the elevated summit, 1,480 metres, may be seen the fertile Limagne, the hills of Forez, the peaks of Mont Dore, and all

the chain of the extinct craters of the Dôme Mountains, which run from south to north, having Puy-de-Dôme in the centre.

THE livery of the Musician's Company, with the freedom of the City of London, was appropriately conferred on Sir Henry Cole, at the dinner on Tuesday. In presenting the honour, the Master, Mr. William Chappell, F.S.A., traced Sir Henry's career with deserved appreciation. Sir Henry was educated at Christ's Hospital. His first public service was as assistant-keeper of the Public Records, where he paved the way to the establishment of the General Record Office. A second public service was the energetic assistance rendered by him to the establishment of penny postage. He gained one of the four prizes of 100*l.* offered by the Treasury for suggestions to develop Sir Rowland Hill's plan, and continued his aid to Sir Rowland until his object was fully attained. He had himself accepted the office of Secretary to the Mercantile Committee on Postage, and was thus instrumental in furthering the success of a measure which he had helped to carry. Sir Henry's services to Art and Science in this country are well known to every one. The exhibitions of art manufactures which commenced about the year 1846, at the rooms of the Society of Arts, were projected and organised by Sir Henry Cole. These annual displays were designed to lead to national exhibitions of arts and manufactures every fifth year. The first of this series would have taken place in 1851, but the plan was developed into the great exhibition of that year. Mr. Cole was one of the executive committee of that famous and most successful exhibition, and received the honour of Companionship of the Order of the Bath at its conclusion. In the following year he was invited by the Government, through Earl Granville, to improve the system of the schools of design, and he was thus instrumental in establishing the Science and Art Department, of which he was at first senior secretary, and afterwards inspector-general. To the pecuniary success of the great exhibition in Hyde Park, which sprang out of Sir Henry Cole's projection of one of more limited character, we are, as we showed in a recent article, mainly indebted for the present magnificent establishments at South Kensington. In 1860 Sir Henry was appointed General Superintendent of the South Kensington Museum, and also acted as Secretary of the Science and Art Department, under the Committee of Council on Education. In this capacity we know that he created, or was directly responsible for, the system of Science and Art Schools which by general consent are acknowledged to have done so much good already for the country. In 1873 he retired from office at South Kensington, after fifty years of public service. Sir Henry's services were acknowledged by her Majesty in conferring on him the rank of Knight Commander of the Bath about two years after his retirement. The last honour which has been conferred upon him is most appropriate, as we have said, and assuredly well deserved.

ON Tuesday a deputation from the British Medical Association waited on the Home Secretary for the purpose of laying before him several resolutions recently passed unanimously at a meeting of the medical profession in London. On behalf of the deputation Dr. Hutchinson handed in the following resolutions:—1st. Proposed by Dr. Andrew Clark and seconded by Dr. Pavy, "That this meeting, although fully recognising the improvements in the Bill of Lord Carnarvon, is still strongly of opinion that should it become law the progress of science would be most seriously hindered, and the interests both of animals and man much prejudiced." 2nd. Proposed by Dr. Barnes, and seconded by Dr. Wm. Adams—"That this meeting would urge upon the promoters of the Bill that legislation on this subject should be abandoned for the present session." 3rd. Proposed by Dr. Stewart, and seconded by Mr. Ernest Hart—"That in the event of its being thought necessary for proposed legislation in the future, this meeting

would suggest, as an alternative measure, first an Act for the simple registration of persons licensed, and secondly by the Act dealing with the whole subject of cruelty to animals." Mr. Cross accepted the resolutions in question, and thanked the deputation for the expression of their views. A long and technical discussion on the various clauses of the Bill ensued between the Home Secretary and the deputation.

EARLY this year there was organised at Boston, U.S., an "Appalachian Mountain Club" for the advancement of the interests of those who visit the mountains of New England and adjacent regions, whether for the purpose of scientific research or summer recreation. The Club will carry on a systematic exploration of the mountains of New England and adjacent regions, publishing its results from time to time, and will collect books, maps, photographs, sketches, and all available information of interest or advantage to frequenters of the mountains. It will also encourage the opening of new paths, clearing of summits from which views may be obtained, and other improvements. At the same time the Club will encourage the study of comparative geography in general, opening its meetings to contributors on zoological and botanical geography, geology, topography, hydrography, travel, and exploration. The Club is divided into five sections or departments of work—Natural History, Topography, Art, Exploration, Improvement, each with its superintending "Councillor;" Prof. Sterry Hunt is Councillor in Natural History, while the President of the new Society is Prof. E. C. Pickering. The publications of the Club will be very comprehensive and exhaustive; under the title of *Appalachia*, the first part of its journal lies before us. It is mostly occupied with details connected with the formation of the Club, but also contains some interesting papers already read at the meetings. Among these we may mention a paper by Prof. C. H. Hitchcock on the "Atlantic System of Mountains;" another by Mr. S. W. Holman on "Two New Forms of Mountain Barometer," and a third on "A New Map of the White Mountains," by Mr. J. B. Henck, besides the reports of the Councillors for the spring of this year. Altogether great things may be expected from this new club. The Secretary's address is the Massachusetts Institute of Technology, Boston, Mass.

THE "Results of the Meteorological and Magnetical Observations for 1875" at Stonyhurst College Observatory, gives very complete summaries of the monthly means and extremes, which are made more valuable by being compared with the results of the past twenty-eight years. To these summaries is appended a discussion on the hours of occurrence of the daily maxima and minima of temperature. As regards the maxima, the mean for the year is 2 P.M., the monthly extremes being mid-day in December and 4 P.M. in June and July. On the other hand, the minima show two maximum periods of occurrence, one from 4 to 5 A.M., and the other at midnight. The excessively frequent occurrence of the lowest night temperature at midnight, which is given at 747, whereas the largest number for any other hour is 307 at 5 A.M., and the double period of the curve (Plate I.), not being in accordance with the physics of the question, suggest that a faulty method of discussion has been adopted. Evidently, as regards both maxima and minima, each daily period of twenty-four hours has been considered as beginning at midnight, whereas each daily period for the minimum temperatures should extend from mid-day to mid-day. Hence the unsatisfactoriness of the discussion, the only remedy for which is to begin the day, as regards the maximum temperatures, at midnight, thus including in each day the whole time the sun is above the horizon; and as regards the minimum temperatures, at mid-day, so as to include in each day the whole time from sun-down to sun-rise.

WE learn that the Circular of the Committee of the R.A.S. requesting drawings of Jupiter to be made at southern observa-

ories during this year has been efficacious in America at least. M. Trouvelot, who has given much time to the production of astronomical drawings has already secured no less than thirty-four drawings during June. This is important, as Dr. Oswald Löhse, who is studying the surface of Jupiter carefully, declares the changes this year to be of exceptional interest.

In the *Bulletin International* of the Paris Observatory for July 14, Prof. Raulin gives a supplement to his valuable paper on the distribution of the rainfall of Algeria, which was published some years ago, based on fifty-five series of observations brought down to the close of 1874. The mode of the distribution of the rainfall of Algeria is much less varied than that of the south of France, for while in the south of France there are six distinct rain-regions, in Algeria there are only two, the one region being characterised by a very dry summer and a very wet autumn and winter, embracing the less elevated land near the shore and the northern borders of the Hauts-Plateaux; and the other region characterised by a very rainy spring and dry summer, including the Hauts-Plateaux with their borders which skirt the Sahara.

WE have received the *Meteorologische Beobachtungen* made thrice daily at the Observatory of the Leipzig University under the direction of Dr. Bruhns during 1875, the whole being carefully reduced, and copious footnotes given each month of the more marked phenomena. The method of publishing only the readings of the dry-bulb and the hygrometric deductions is faulty. All such publications ought to include at least both of the observed facts, viz., the readings of the wet bulb as well as those of the dry bulb.

A FALL of meteorites, we learn from *Aftonbladet*, took place on June 28, between 11 and 12 A.M., near Ståldalen, a station on the Swedish Central Railway, in the northernmost part of Örebro-län. Several fell, some on the ground and others in a lake. Two were found, one about the size of the fist and weighing $4\frac{1}{2}$ lbs., the other smaller. Eye-witnesses stated that a loud whistling was first heard in the air from west to east, and a light was plainly distinguishable; although the sky was clear and cloudless, thereafter two very sharp reports were heard, the second succeeding the first after a momentary interval, followed by several others less sharp, resembling thunder, after which the falling stones were observed by eight or ten persons; and finally, there was seen in the air a whirling smoke, not very high up. A meteor was observed simultaneously at Stockholm and at other places. At thirteen English miles south-west of Linköping it was seen first in a north-westerly direction pretty high up in the sky, and it then sank down in about ten seconds towards the horizon in the west. It had the appearance of a large pear a foot long, which, notwithstanding the bright sunshine, lest behind a clear shining streak of six or eight feet in apparent length, which finally broke up into a multitude of starlike sparks. Here no noise was heard. According to a communication from the Stockholm Meteorological Bureau, there is reason to believe that the phenomena arose from the "kulblix" (*foudre globulaire*), which generally appears as a luminous round object, and often, on approaching the ground, assumes a lengthened form and a blinding white colour, and bursts asunder, commonly with a loud report. As all who observed the meteor, both in Stockholm and in Södermanland, saw the luminous appearance in the same direction, viz. W.N.W., it is probable that the light proceeded from the main mass of the meteor situated at a very great distance. The phenomenon observed here (at Stockholm) must therefore have been so far an illusion, the object, instead of being, as most people estimated, within a few thousand feet, being actually at a great distance. Later information shows that the phenomenon was visible over a great part of middle Sweden.

THE most interesting article in Heft 7 of Petermann's *Mittheilungen* is on the present Turko-Servian war in its ethno-

graphic and historical bearing. The various and very varied elements that go to make up the population over which the Sultan holds sway are pointed out, as well as the fact that the war is not one between Turks and non-Turks, but between Mohammedans and Christians, and especially Christians of the Greek Church. It is thus not a war of races, as many seem to think, a struggle on European ground between Aryans and Turanians, but a religious war, Mohammedanism not being confined to people of Turkish origin. An excellent map to illustrate the various data given in the paper, accompanies the part. There is an article on the geography of the region around the mouths of the Ob and the Jenisei, founded on the information obtained by Nordenskjöld's expedition of last year, of which an account appeared in NATURE; this article is also accompanied by a map. Another article describes Largeau's second expedition to Rhadames. Dr. Schweinfurth contributes an account of the expedition conducted by himself and Dr. Giussfeldt to the Arabian Desert from the Nile to the Red Sea, as also of Dr. Ascherson's journey to the Little Oasis (Wah-el-Bah'rieh) in March-May, 1876. In an article on the "Solution of the Question of the Nile Sources," Dr. Behm refers to the recent circumnavigation of Lake Albert Nyanza by Signor Gessi, and maintains that it is now proved that the true sources of the Nile are Lakes Albert and Victoria, and that therefore the glory of the finding of this ancient quest belongs to the late Capt. Speke along with his still living companion, Col. Grant. Among the Geographical Notices is a paper by Dr. Hann, on "Certain Important Irregularities of the Sea-level."

FROM the "Ninth Annual Report of the Trustees of the Peabody Museum of American Archaeology and Ethnology" (Cambridge, U.S.), we learn that the trustees have resolved to proceed with the erection of a museum building worthy of the magnificent collection they possess. The most important addition to the museum during the year, probably the largest donation ever made to the museum, is that from Peru and Bolivia, collected by and at the personal expense of Mr. Alexander Agassiz. This collection is of great importance in relation to South American archaeology and ethnology. Other additions have been made from various parts of America. A General Index to the nine Annual Reports accompanies the present one.

M. LARGEAU and M. Louis Say are about to undertake another expedition into North Africa; the goal of the former this time will be Timbuctoo, and of the latter Ahagggar, the culmination of the Central Sahara, and which, it is said, has not hitherto been visited by any European.

In a recent communication to the French Geographical Society, M. Alph. Pinard announced the discovery of a great number of tumuli, quite different from the shell-mounds, on the south and south-east coast of Vancouver Island, which he has been exploring for some time. Out of one he obtained a skeleton with a much deformed head.

THE Vienna papers report the death of Mdme. Hulsenstein, a lady who had been maid of honour to Maria Theresa, and lived to the extraordinary age of 119 years. The case ought to be noted as being well authenticated and not grounded merely on idle rumour.

THE number of visitors to the Loan Collection of Scientific Apparatus during the week ending July 29 was as follows:—Monday, 3,263; Tuesday, 2,660; Wednesday, 514; Thursday, 459; Friday, 508; Saturday, 3,880; total, 11,284. The usual lectures and demonstrations are given during the present week.

THE statue of M. Elie de Beaumont will be inaugurated at Caen (Calvados) on the 6th inst. The ceremony will be interesting, as a deputation from the Institute will be present to do honour to the late perpetual secretary.

THE Senate of the French Republic having rejected the law proposed by the Government and adopted by the Legislative Assembly for conferring honours on students, a mixed jury has been appointed to give diplomas to the pupils of Catholic universities. This body will sit in the Salle Gerson, close to the Sorbonne; the Session will begin next week. The number of candidates is very limited owing to the failure of the new universities.

DR. B. W. RICHARDSON'S proposal for a "City of Health" (the *Times* states), mooted by him in the autumn of last year, is about to be tried practically. A site has been secured on the coast of Sussex, where the sanitary city will be laid out and in due time erected. Dr. Richardson has given his countenance to the scheme, and will supervise the sanitary arrangements, while Mr. Frank E. Thicke will be responsible for the architectural details.

THE Annual Meeting of the British Medical Association commenced on Tuesday at Sheffield, under the presidency of Dr. de Bartolomé of that town.

M. UJFALVY has been entrusted by the French Minister of Public Instruction with a scientific mission, having for its object ethnographical, linguistic, and historical researches in Russia and Central Asia. M. Ujfalvy proposes to set out early this month for St. Petersburg; from thence he will go to Moscow, Nijni-Novgorod, Kazan, and Irkutsk. He proposes also to descend the Volga to the Caspian, and with permission of the Russian authorities to penetrate into Turkestan and the Khanate of Khokand, and as far as Kashgar, returning by southern Siberia.

THE fifth Annual Exhibition of Industrial Arts was opened at the Palais de l'Industrie, Paris, on August 1. This exhibition is remarkable for the large number of historical pictures representing the appearance of Paris at different dates. Each year the several schools of design established by the municipality in different places hold a special exhibition. A great improvement is said to have been noted this year.

SOME French departments are creating agricultural professorships to be paid at the expense of the local budget. One of these has been established by Vienne, one of the most advanced departments in meteorological organisation. The professor will be appointed by competition. He will have to teach the pupils of the normal primary school and to deliver lectures at a number of rural localities. The salary is to be 190*l.* irrespective of special allocations and travelling expenses.

THE additions to the Zoological Society's Gardens during the past week include two Tigers (*Felis tigris*), two Indian Leopards (*Felis pardus*), an Indian Elephant (*Elephas indicus*), two Indian Antelopes (*Antelope cervicapra*), two Horned Tragopans (*Cerionis satyra*) from India, presented by H.R.H. the Prince of Wales; two Ringed-necked Parrakeets (*Palaeornis torquata*) from India, presented by Mrs. Doxat; an Anubis Baboon (*Cynocephalus anubis*) from West Africa, two Australian Crows (*Corvus australis*) from Australia, received in exchange; an Axis Deer (*Cervus axis*), four Chilian Pintails (*Dafila spinicauda*), four Common Teal (*Querquedula crecca*), two Crested Guinea Fowls (*Numida cristata*), bred in the Gardens.

SCIENTIFIC SERIALS

Journal of the Chemical Society, May.—Mr. Francis Jones, F.R.S.E., contributes a paper on stibine. Mr. Jones has investigated several methods of producing this gas, and the one which commends itself to him as the most convenient is the following. A strong solution of antimony in hydrochloric acid is allowed to drop on a considerable bulk of zinc, either granulated or in powder. The resulting gas is then purified by passing it through

a very dilute solution of caustic soda, and subsequently dried over calcium chloride and phosphoric anhydride.—Dr. Paul von Hamel Roos gives a paper upon crystallised glycerine. The solidification of this body seems to depend upon the entire absence of water or any other impurity. Dr. Roos is carrying on further investigations with this interesting compound.—Messrs. Beckett and Wright contribute a paper on the action of the organic acids and their anhydrides on the natural alkalis.—A paper on the use of platinum in the ultimate analysis of carbon compounds, by Mr. Ferdinand Kopfer, of Owens College, Manchester, is the last of the papers read before the Society which appears in this number.—The usual extensive collection of abstracts from papers in British and foreign journals occupies the remainder of this number.

Journal of Mental Science, July.—An article on Kalmuc idiosyncrasy is contributed by Dr. John Fraser, with notes of cases by Dr. Mitchell.—In an unsigned essay on John Howard—curious as an application of the necessitarian doctrine to the estimate of character—there is a persistent attempt to depreciate the moral grandeur of the great philanthropist, and to show that his labours have borne much evil as well as good fruit. The essay is accompanied by notes written in an opposite spirit.—Dr. Clave Shaw on the measurement of the palate in idiots and imbeciles, gives evidence that there is no necessary connection between a high palate and the degree of mental capacity of the individual, and that it is difficult to see of what service a palatal investigation can be in affording a clue to the mental faculties.—A very interesting antiquarian and topographical account of the Bethlem Royal Hospital from the year 1247 is given by Dr. Hack Tuke.—Dr. J. A. Campbell presents notes on the reparative power in insanity.—The plea of insanity as set up in two cases of murder is discussed by Dr. Yellowlees, and the difficulties and delicacies of the subject are well brought out.—In an important correspondence between Dr. Bucknill and Dr. Clouston on the relations of drink and insanity, Dr. Bucknill gives his views at considerable length.—An Arab physician on insanity; clinical notes and cases; four neat little reviews of books; the psychological retrospect, English, German, American; with notes and news make up the number.

Sitzungsberichte der Naturwissenschaftlichen Gesellschaft Isis in Dresden, January to June, 1875.—We note, in the Botanical Section, some observations by Prof. Nobbe on root formation of seed plants. The rôle of roots being the conveyance of water and mineral matters, and the amount of this depending, *ceteris paribus*, on the extent of surface of young root fibres, he set himself to ascertain this extent in different plants in relation to the surface of the green organs. Plants of Scotch fir, spruce fir, and silver fir, were so grown, that all the root fibres could be collected without loss. The first year's root-product of the Scotch fir (about 12 inches long) exceeded that of the spruce fir about six times, and that of the silver fir about twelve times. The surfaces of the organs above ground were, to those of the subterranean organs, in the Scotch fir as 100 : 477; in the spruce fir as 100 : 168; in the silver fir as 100 : 169. (The entire surface of the first year's plants were respectively, in the order just given, 24,820, 5,690, and 3,903 sq. mm.) It is thus seen how the Scotch fir thrives on sterile, sandy ground, where spruce fir and silver fir perish; also the difficulty of transplanting the Scotch fir may be understood, for a considerable portion of the root is apt to be left in the ground, and the plant does not recover from the loss, nor reproduce the fibres readily.—The geological department contains descriptions of the geology and mineralogy of Vignose in Norway, and of the Kaiserstuhl in Breisgau, Baden.

Jahrbuch der Kaiserlich-königlichen geologischen Reichsanstalt Wien.—In the third and fourth parts of this valuable scientific journal, published during the last six months of 1875, there are a number of articles of very considerable scientific interest. Among the papers on geology, that by Dr. Woldrich, on the old gneiss formation of a part of the Böhmerwald may be noticed as especially worthy of attention; and the same may be said of the memoir which Doelter and Hoernes contribute on the subject of the origin of dolomites, bearing especial reference as it does to the remarkable and well-known rocks of this class in the Southern Tyrol.—The excellent palaeontological papers by Dr. Hoernes and MM. Herbig and Neumayr respectively, throw fresh light on those extensively developed tertiary deposits of Eastern Europe, the study of which is, in the hands of the Austrian and Hungarian geologists,